JOURNAL OF

Inorganic Biochemistry

an interdisciplinary journal

devoted to all aspects of biological inorganic chemistry

Volume 18 1983

ELSEVIER BIOMEDICAL

JOURNAL OF
Inorganic Biochemistry

seeking to establish direct communication between inorganic and biological chemists

Papers are invited on the following subjects: the chemistry, structure, and function of metalloenzymes and of coordination compounds of biological interest; the interaction of inorganic compounds with proteins and nucleic acids, the enzymatic and nonenzymatic biochemistry of small molecules, elementary biocatalytic processes, the fundamental aspects of enzyme action, enzyme models, the prebiotic synthesis of biologically important organic compounds, the function and distribution of trace elements in living systems, and related subjects.

Editors-in-Chief

H. A. O. Hill
Inorganic Chemistry Laboratory
University of Oxford
South Parks Road
Oxford OX1 3QR
United Kingdom

J. F. Riordan
Harvard Medical School
250 Longwood Avenue
Seely G. Mudd Building
Boston, Mass. 02115
U.S.A.

Board of Advisors

O. Hayaishi
Kyoto, Japan

M. D. Kamen
San Diego, Ca., U.S.A.

B. G. Malmstrom
Goteborg, Sweden

G. N. Schrauzer
La Jolla, Ca., U.S.A.

B. L. Vallee
Boston, Mass., U.S.A.

R. J. P. Williams
Oxford, U.K.

Board of Editors

R. C. Bray
Sussex, U.K.

M. Brunori
Rome, Italy

D. Dolphin
Vancouver, Canada

Gunther L. Eichhorn
Baltimore, MD, U.S.A.

H. C. Freeman
Sydney, Australia

I. Fridovich
Durham, NC, U.S.A.

C. Greenwood
East Anglia, U.K.

R. H. Holm
Cambridge, MA, U.S.A.

L. S. Hurley
Davis, CA, U.S.A.

S. Fukui
Kyoto, Japan

G. Leigh
Sussex, U.K.

S. J. Lippard
Cambridge, MA, U.S.A.

Luigi G. Marzilli
Atlanta, GA, U.S.A.

C. F. Mills
Aberdeen, U.K.

W. H. Orme-Johnson
Cambridge, MA, U.S.A.

A. E. Shilov
Chernogolovka, U.S.S.R.

A. J. Thomson
East Anglia, U.K.

V. Ullrich
Hamburg, W. Germany

Volume 18, Number 1, 1983

Contents

MUNIME LUNDEEN
A Copper-binding Site in Cytochrome Oxidase. The Secondary Structure of Subunit II 1

T. SKOTLAND and T. LJONES (Bergen, Norway)
Enzyme-Bound Copper of Dopamine β-Monooxygenase. Activation of the Holoenzyme by Added Copper and Uncoupling of Electron Transfer from Hydroxylation by Copper Salicylate 11

LUIGI CASELLA and MICHELE GULLOTTI (Milano, Italy)
Coordination Modes of Histidine. 4. Coordination Structures in the Copper(II)-L-Histidine (1:2) System 19

JANE E. FREW and PETER JONES (Newcastle upon Tyne, United Kingdom)
Peroxidase-like Activities of Iron(III)-Porphyrins: Kinetics of the Reduction of a Peroxidatically Active Derivative of Deuteroferriheme by Anilines 33

KENSEI KOBAYASHI, MASAHIRO MATSUI, HIROKI HARAGUCHI, and KEIICHIRO FUWA(Tokyo, Japan)
Identification of Alkaline Phosphatase in Sea Water 41

JEI-FU SHAW, JANE DAWSON FUNKHOUSER, V. ANNE SMITH, and W. GRADY SMITH (Little Rock, AR, USA)
Additional Effects of Monovalent Cations on the Lysine-sensitive Aspartokinase of *E. coli* B 49

GUNTER SCHNEIDER and MICHAEL ZEPPEZAUER (Saarbrücken, West Germany)
Kinetics and Mechanisms of the Recombination of Zn^{2+}, Co^{2+}, and Ni^{2+} with the Metal-depleted Catalytic Site of Horse Liver Alcohol Dehydrogenase 59

JOHN M. BREWER (Athens, GA, USA) and PAUL D. ELLIS (Columbia, SC, USA)
^{31}P-nmr Studies of the Effect of Various Metals on Substrate Binding to Yeast Enolase 71

F. A. ARMSTRONG, P. C. HARRINGTON, and R. G. WILKINS (La Cruces, NM, USA)
Reduction Potentials of Various Hemerythrin Oxidation States 83

Volume 18, Number 2, 1983

Contents

CLIFTON BLINCOE and GALE HANSEN STARICH (Reno, NV, USA)
In Vitro Formation of Chromium Complex from Higher Plants 93

ERIC W. AINSCOUGH, ANDREW M. BRODIE, STUART J. McLACHLAN, and VICKIE S. RITCHIE (Palmerston North, New Zealand)
Spectroscopic Studies on Copper(II) Complexes of Human Lactoferrin 103

BENGT REINHAMMAR (Gothenburg, Sweden)
Optical Properties and a New epr Signal from Type 3 Copper in Metal-depleted *Rhus vernicifera* Laccase 113

BRIDGET C. MABBUTT and PETER E. WRIGHT (Sydney, Australia)
^{1}H nmr Studies of Complexes of Ferric Leghemoglobin with Substituted Pyridines and Nicotinic Acids 123

N. RAOS and Vl. SIMEON (Croatia, Yugoslavia)
Conformational Analysis and Hydration Models of Copper Threoninates and Isoleucinates 133

L. A. DOMINEY and K. KUSTIN (Waltham, MA, USA)
Kinetics and Mechanisms of Zn(II) Complexation with Reduced Glutathione 153

GEORGE F. TIDMARSH, PHILLIP E. KLEBBA, and LEON T. ROSENBERG (Stanford, CA, USA)
Rapid Release of Iron from Ferritin by Siderophores 161

S. MANN, S. B. PARKER, and R. J. P. WILLIAMS (Oxford, England)
A Report on the Fourth International Symposium on Bio-Mineralization 169

ROBERT E. LENKINSKI (Guelph, Canada) and RICHARD L. STEPHENS (Birmingham, AL, USA)
The Nature of the Ln^{3+}-Angiotensin II Complex. A ^{13}C nmr Study of the Binding of Yb^{3+} to Angiotensin II 175

S. E. TAYLOR (Sunbury-on-Thames, England)
Book Review: *Metal Ions in Genetic Information Transfer* 181

STEVEN H. STRAUSS (Fort Collins, CO, USA)
Book Review: *Inorganic Syntheses, Volume XXI* 183

Volume 18, Number 3, 1983

Contents

ROSEMARIE SWANSON, WILLIAM H. ILSLEY (College Station, TX, USA) and ANNA G. STANISLOWSKI (Davis, CA, USA)
Crystal Structure of Zinc Citrate 187

STEVEN J. HAYLOCK, PAUL D. BUCKELY, and LEONARD F. BLACKWELL (Palmerston North, New Zealand)
Separation of Biologically Active Chromium-containing Complexes from Yeast Extracts and other Sources of Glucose Tolerance Factor (GTF) Activity 195

SHIRLEY D. CUTBUSH, REIKO KURODA, and STEPHEN NEIDLE (London, England) and A. BRIAN ROBINS (Surrey, England)
The Antitumor Complex Ethylenediamine Platinum(II) Malonate: X-Ray Structure Analysis, and Studies of Its Stability in Solution 213

I. BERTINI, G. CANTI, C. LUCHINAT, and E. BORGHI (Firenze, Italy)
Investigation of the System Copper(II) Carbonic Anhydrase and HCO_3^-/CO_2 221

HENRYK KOZLOWSKI (Wroclaw, Poland) MARY BEZER and LESLIE D. PETTIT (Leeds, England), and MICHEL BATAILLE and BERNARD HECQUET (Lille, France)
Coordination Abilities of Tetrapeptides Containing Proline and Tyrosine—A Spectrophotometric and Potentiometric Study 231

DALLAS L. RABENSTEIN, R. STEPHEN REID, and ANVARHUSEIN A. ISAB (Edmonton, Alberta, Canada)
^1H nmr Study of the Effectiveness of Various Thiols for Removal of Methylmercury from Hemolyzed Erythrocytes 241

NAVA ZISAPEL, TOVA BLANK, and MORDECHAI SOKOLOVSKY (Tel Aviv, Israel)
Metal Ion Effects on Target Sites of Modification in Metallocarboxypeptidase B 253

TETSUHIKO YOSHIMURA (Kobe, Japan)
Q-Band Electron Paramagnetic Resonance Study of Nitrosylprotoheme Dimethyl Ester Complexes with N-, O-, and S-Donor Ligand as Model Systems for Nitrosylhemoproteins 263

Volume 18, Number 4, 1983

Contents

R. O. RAHN, S. S. CHANG, and J. D. HOESCHELE (Oak Ridge, TN, USA)
Adducts Formed Between Deoxyguanosine and *cis*-Dichlorodiammine-platinum(II): Separation by Means of Cation-Exchange Chromatography 279

ARTHUR J. CARTY, SHAUN F. MALONE, NICHOLAS J. TAYLOR, and ALLAN J. CANTY (Waterloo, Ontario, Canada)
Synthesis, Spectroscopic, and X-Ray Structural Characterization of Methylmercury-D,L-Selenocysteinate Monohydrate, A Key Model for the Methylmercury(II)-Selenoprotein Interaction 291

ROGER W. GIESE (Boston, MA, USA)
Metallocenes for Protein Modification. II. Maleylirontetracarbonyl-Maleyl-Ribonuclease 301

MARY ELLEN COOKE, MARK ELLIS McDANIEL, SHARON RUTH JAMES, SHERRI LYNNE JONES, NICHOLAS TROBAK, BART CHARLES CRAYTOR, DANIEL RAY BUSHMAN, and JOHN RICKEN WRIGHT (Durant, OK, USA)
Derivatives of the Red-Violet Cluster of Copper and Penicillamine Prepared by Mixed Ligand Formation Reactions or Direct Additions 313

T. T. EL-GALLAD, C. F. MILLS, I. BREMNER, and R. SUMMERS (Bucksburn, Aberdeen, Scotland)
Thiomolybdates in Rumen Contents and Rumen Cultures 323

GRAZYNA FORMICKA-KOZLOWSKA (Wroclaw, Poland) and MARY BEZER and LESLIE D. PETTIT (Leeds, England)
Coordination Ability of the Thyrotropin Releasing Factor, L-Pyroglutamyl-L-Histidyl-L-Prolinamide (TRF). III. Cu(II) and Ni(II) Complexes with TRF and its Di- and Tripeptide Analogues 335

IDA BARNI COMPARINI, ELENA GAGGELLI, and GIANNI VALENSIN (Siena, Italy)
Conformational and Kinetic Features of the Morphine-Mn(II) Interaction as Probed by Nuclear Paramagnetic Resonance Investigations 349

Author Index 361